

REMARKS

Claims 1 to 8 are pending. No claims are currently canceled. No claims have been withdrawn from consideration. Claims 1-3, 6 and 7 are currently amended. No claims have been added. Reconsideration of the application is requested.

Specification Objections

The specification was objected to for the informalities of misspellings and lack of English units. Applicants believe that the proper corrections to the specification have now been made. Accordingly, the above objection should be withdrawn.

Claim Objections

Claims 2 and 6 were objected to because the wording is confusing, being vague, and indefinite.

Applicants have amended claims 2 and 6 in an attempt to make them more readable and definite. Accordingly, Applicants respectfully request that the above objection be withdrawn.

§ 103 Rejections

Claims 1, 4, 5, and 8 are rejected under 35 USC § 103(a) as being unpatentable over Haunschild et al (US 5,981,033) or Poole (US 3,036,928) in view of Boeing A&M Environmental Technotes, Volume 6, Number 2 (May 2001) ("Boeing") or Matsumoto website (July 19, 2001) ("Matsumoto"). The Examiner submits in part that: Haunschild or Poole discloses a temporary marking material containing a binder, pigment, and microballs wherein said layer is adhered to a surface of a structure for use by virtue of the binder contained in the layer; Boeing disclose thermally expansible microballs; Matsumota discloses thermally expansible microballs; and that it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the microballs and layer of Haunschild or Poole to be thermally expansible by using the microballs of Boeing or Matsumoto in order to make the layer easily removable.

The present invention relates to a temporary marking material which comprises a thermally-expansible layer containing a binder, a pigment, and thermally-expansible microballs. The temporary marking material is adhered to a structure by virtue of the binder contained in the thermally-expansible layer. Thus, the thermally-expansible layer (binder, pigment, thermally-expansible microballs) would be in contact and adhered to a structure during use.

Applicants respectfully disagree with the above rejection. First, even if the requisite motivation to combine exists, the combination of Haunschild et al. and either Boeing or Matsumoto would not result in the invention as claimed in claim 1. Haunschild et al. disclose a removable pavement marking tape. However, the binder layer 106 of Haunschild et al. that contains binder, pigment, and glass microspheres is only the top layer of a multilayer tape article. Thus, even if the thermally-expansive microballs of Boeing or Matsumoto were substituted for the glass microballs of Haunschild et al., layer 106, would not be adhered to a structure for use by virtue of the binder layer. The tape article of Haunschild et al. is adhered to a structure 116 by virtue of adhesive layers 110, 112, which do not contain glass microspheres or binder.

Second, one skilled in the art at the time of the invention would have no motivation to combine Poole with either Boeing or Matsumoto. Poole discloses a retroreflective composition containing binder, pigment, and glass microspheres. The binder is said to be made from a hot-melt thermoplastic material. Poole is silent on whether its marking material is temporary. In fact, Poole describes the composition which consists of binder permanently holding in place beads, pigment and filler (Column 4, lines 60-64). Thus, because Poole discloses marking materials that are intended to be permanent, one of ordinary skill in the art would not be motivated by the teaching of either Poole or Boeing or Matsumoto to alter the fundamental function of the Poole article in order to add thermally-expansible microballs and make it removable. For the above reasons, Applicants submit that the claimed invention in claims 1, 4, 5, and 8 is allowable over the above rejections. Accordingly, Applicants respectfully request that the above rejections be withdrawn.

Claims 2 and 6 are rejected under 35 USC § 103(a) as being unpatentable over Haunschild et al. or Poole in view of Boeing. The Examiner submits in part that: Haunschild et al. or Poole disclose a pavement marker material and a pavement marker as previously set forth,

but does not disclose that the thermally-expansible microballs are expandable at a predetermined temperature; Boeing discloses thermally-expandable microballs; and that it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the marking material and pavement marker of Haunschild et al. or Poole to have thermally-expansible microballs that are expandable at a predetermined temperature.

Applicants believe that they have discussed this rejection above and have therefore addressed this rejection. For at least the reasons stated above, Applicants submit that the claimed invention is allowable over the above rejection. Accordingly, Applicants respectfully request that the above rejection be withdrawn.

Claim 3 is rejected under 35 USC § 103(a) as being unpatentable over Haunschild et al. or Poole in view of Boeing and further in view of Matsumoto. The Examiner submits in part that: Haunschild et al. or Poole as modified by Boeing discloses a temporary marking material as set forth above but does not disclose that the microballs have an expansibility of at least 10 times in terms of volume; Matsumoto discloses expansion ratios of thermally-expansible microballs of about 20, 60, and 70; and that it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the thermally-expansible microballs of Haunschild et al. or Poole as modified by Boeing to have an expandability of at least 10 times as taught by Matsumoto.

Applicants have discussed the proposed combination of Haunschild et al. or Poole in view of Boeing, above. The addition of Matsumoto to Haunschild et al. in view of Boeing does not result in the claimed invention for the reasons discussed above for claim 1. Matsumoto also does not provide the missing motivation for combining Poole with Boeing, in order to alter the function of the permanent marking material of Poole. For at least these reasons, Applicants submit that the above rejection has been overcome. Accordingly, Applicants respectfully request that the above rejection of claim 3 be withdrawn.

Claim 7 is rejected under 35 USC § 103(a) as being unpatentable over Haunschild et al. or Poole in view of Matsumoto. The Examiner submits in part that: Haunschild et al. or Poole

discloses a temporary marking material as set forth above but does not disclose that the microballs have an expansibility of at least 10 times in terms of volume; Matsumoto discloses expansion ratios of thermally-expansible microballs of about 20, 60, and 70; and that it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the thermally-expansible microballs of Haunschild et al. or Poole as modified by Boeing to have an expandability of at least 10 times as taught by Matsumoto.

Applicants believe that they have discussed this rejection above and have therefore addressed this rejection. For at least the reasons stated above, Applicants submit that the claimed invention is allowable over the above rejection. Accordingly, Applicants respectfully request that the above rejection be withdrawn.

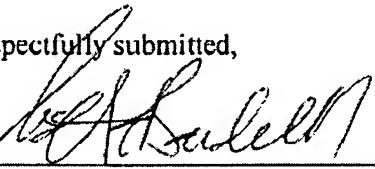
In view of the above, it is submitted that the application is in condition for allowance. Examination and reconsideration of the application as amended is requested.

If Examiner believes it would be helpful, Applicant requests a telephone interview to more fully understand the examiners position and advance this case to issuance.

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Respectfully submitted,

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